



2122

#5
BT
2/00
10-9-02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : MATTHIAS KEHDER ET AL. Docket No.: 01-203

Serial No. : 09/863,175

Examiner :

Filed : May 23, 2001

Art Unit :

For : PROCESS AND SYSTEM FOR
DEVELOPING A PREDICTIVE MODEL

RECEIVED

OCT 04 2002

Technology Center 2100

900 Chapel Street
Suite 1201
New Haven, CT 06510-2802

INFORMATION DISCLOSURE STATEMENT

Hon. Commissioner of Patents and Trademarks
United States Patent and Trademark Office
Washington, D.C. 20231

Dear Sir:

In compliance with Applicants' duty of disclosure, the following patent documents are brought to the Examiner's attention:

U.S. Patent No. 5,742,738 to Koza et al.;

U.S. Patent No. 5,343,554 to Koza et al.;

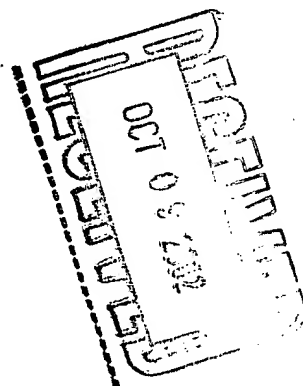
U.S. Patent No. 6,058,385 to Koza et al.;

U.S. Patent No. 5,136,686 to Koza;

U.S. Patent No. 5,390,282 to Koza et al.;

"Approximation Techniques for Variations of the p-Median Problem", by Cory J. Hoelting et al.; and

"GENOCOP: A Genetic Algorithm for Numerical Optimization Problems with Linear Constraints", by Zbigniew Michalewicz et al.



The Koza et al. '738 patent relates to an apparatus and method for solving problems where a population is created and evolved to generate a result. While solving the problem, the architecture of entities in the population are altered. Each of the entities may include internally and externally invoked sub-entities. The externally invoked sub-entities are capable of having actions, invocations of sub-entities which are invoked internally, and material. Also, each sub-entity which is invoked internally is capable of including actions, invocations of internally invocable sub-entities, material provided to the externally invocable sub-entity, and material.

The Koza et al. '554 patent relates to an apparatus and method for solving problems using automatic function definitions for solving problems using recursion and for performing data encoding. The Koza et al. invention includes an apparatus and process for creating a population and then evolving that population to generate a result. When solving problems using automatic function definition, the apparatus and process initially creates a population of entities. Each of the entities has sub-entities of internally and externally invoked sub-entities. The externally invoked sub-entities are capable of having actions, invocations of sub-entities which are invoked

internally, and material. Also, each sub-entity which is invoked internally is capable of including actions, invocations of internally invocable sub-entities, material provided to the externally invocable sub-entity, and material. The population is then evolved to generate a solution to the problem. When using the process to solve problems using recursion, the entities in the population are constructed in such a manner as explicitly to represent the termination predicate, the base case and the non-base case of the recursion. Each entity has access to a name denoting that entity so as to allow recursive references. The population is then evolved to generate a solution to the problem. When encoding a set of data values into a procedure capable of approximating those data values, the apparatus and process initially creates a population of entities. The population is then evolved to generate a solution to the problem.

The Koza et al. '385 patent relates to an apparatus and method for solving problems where a population is created and evolved to generate a result. While solving the problem, the architecture of entities in the population are altered. Each of the entities may include internally and externally invoked sub-entities. The externally invoked sub-entities are capable of having actions,

invocations of sub-entities which are invoked internally, and material. Also each sub-entity which is invoked internally is capable of including actions, invocations of internally invocable sub-entities, material provided to the externally invocable sub-entity, and material.

The Koza '686 patent relates to a non-linear genetic algorithm for problem solving. The iterative process of the invention operates on a population of problem solving entities. First, the activated entities perform producing results. Then the results are assigned values and associated with the producing entity. Next, entities having relatively high associated values are selected. The selected entities perform either crossover or fitness proportionate reproduction. In addition other operations such as mutation, permutation, define building blocks and editing may be used. Lastly, the newly created entities are added to the population.

The Koza et al. '282 patent relates to an apparatus and process for solving problems using self-replicating and self-improving entities. The Koza et al. invention includes an apparatus and process for solving a problem using a population of entities, wherein each of the entities is an arrangement of actions and material which are capable of including an incorporation action and are

capable of including an emission action. The Koza et al. invention also includes a process and apparatus for activating each of the entities by presenting each of the entities with at least one combination of environmental material. If an entity has an incorporation action then that entity searches the population for a part of one of the entities and then incorporates the portion of the one entity associated with the part into itself. If the entity includes an emission action then the entity searches the population for a part and then the entity produces at least one emission, such that if the entity responds effectively to a combination of environmental material then the emission enters the population and if the entity fails to respond effectively then the emission fails to enter the population. The activation continues until one of the entities responds effectively to a specified number of combinations of material, such that a solution to the problem is generated.

The Hoelting et al. paper investigates the genetic algorithm as a heuristic technique for obtaining near optimal solutions to location problems that are variation so the p-median problem.


The Michalewicz et al. paper relates to genetic algorithms.

None of the above cited materials are believed to
negate the patentability of the present invention.

A listing of the aforementioned documents on Form PTO-
1449 is enclosed herewith along with copies of the cited
documents.

Respectfully submitted,

MATTHIAS KEHDER ET AL.

By 
Barry L. Kelmachter
Attorney for Applicants

Area Code: 203
Telephone: 777-6628 ext. 114
Telefax : 865-0297

Date: September 26, 2002

I hereby certify that this correspondence is being
deposited with the United States Postal Service as first
class mail in an envelope addressed to: Commissioner
of Patents and Trademarks, Washington, DC 20231

on September 26, 2002
(Date of Deposit)

Nicole Motzer

Name and Reg. No. of Attorney



Signature

September 26, 2002
Date of Signature